



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Mail Code 401-03

Division of Water Supply & Geoscience

Water System Operations Element

Bureau of Safe Drinking Water

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MEMORANDUM

TO: All Community Public Water Systems that Purchase Surface Water or Purchase Ground Water Under the Direct Influence of Surface Water, including Purchases Made to Supplement Ground Water Wells

FROM: Karen Fell, Assistant Director 
NJDEP, Water System Operations Element

DATE: November 29, 2013

RE: Notification of Disinfection Residual Monitoring and Compliance Requirements for Water Systems that Purchase Surface Water or Purchase Ground Water Under the Direct Influence of Surface Water, including Purchases Made to Supplement Ground Water Wells

The New Jersey Department of Environmental Protection's Water System Operations Element (Element) is contacting you to briefly describe the disinfection residual monitoring and compliance requirements that apply to your potable water system.

Stage 2 Disinfectants and Disinfection Byproduct Rule (Stage 2 DBPR) established monitoring requirements for consecutive systems that do not add a disinfectant but deliver water that has been previously treated with a chemical disinfectant. 40 CFR 141.624 states that such systems "...must comply with analytical and monitoring requirements for chlorine and chloramines in 40 CFR 141.131(c)1, 40 CFR 141.132(c)1 and the compliance requirements in 40 CFR 141.133(c)1 beginning April 1, 2009..." Therefore, beginning April 1, 2009, systems that purchase surface water (SW) or Ground Water Under the Direct Influence of Surface Water (GWUDI) were required to do the following:

- 1) monitor for disinfection residuals at the same time and place in the distribution system that total coliforms were sampled, including repeat sample locations, and
- 2) meet a maximum residual disinfectant level (MRDL) of 4.0 mg/L (as Cl_2) for chlorine or chloramines as a running annual average computed quarterly.

In addition to these requirements, the Surface Water Treatment Rule, specifically 40 CFR 141.72(b)3, established a third disinfectant residual requirement as follows:

- 3) no more than 5% of the disinfectant residual samples collected throughout the distribution system can be undetectable for any two (2) consecutive months that the system serves water to the public.*

**The New Jersey State Safe Drinking Water Act Regulations, specifically N.J.A.C. 7:10-1.3, defines detectable disinfectant residual as "a chlorine residual of at least 0.05 mg/L (free chlorine, combined chlorine or chlorine dioxide), or a heterotrophic plate count (HPC) of 500 colonies/ml or less at the point of collection." In the absence of a detectable disinfectant residual concentration, an HPC reading with a result of 500 colonies/ml or less is considered to have the equivalent of a detectable residual. Please note that HPC analysis must be conducted by a New Jersey certified laboratory.*

Please be advised that failure to maintain a detectable residual in the distribution system, as defined above, for two (2) consecutive months is a treatment technique violation and must be reported within 48 hours to the Bureau of Safe Drinking Water (BSDW). In addition, customers must be informed of the violation via a Tier 2 Public Notification in accordance with 40 CFR 141.203. Your water system will also be required to propose and implement a remedy to assure that the required disinfectant residual levels in the distribution system are consistently provided.

Disinfectant residual monitoring results must be reported as outlined in 40 CFR 141.75(b)2 and 40 CFR 141.134(c) and submitted to the BSDW on the "Disinfectant Residuals Reporting Form," BSDW-25, Revised 10/13 (DR Form). Although the DR Form has three (3) sections, only Sections B and C need to be completed by systems that purchase SW or purchase GWUDI. The DR Form must be submitted monthly to the letterhead address as disinfectant residual samples cannot be submitted electronically via E2 at this time. The DR Form will be available electronically at http://www.nj.gov/dep/watersupply/dws_report.html and a copy of the DR Form is enclosed for your convenience.

The information required in Section B of the DR Form evaluates your system's ability to maintain a detectable residual in the distribution system while Section C data is used to evaluate compliance with the MRDL in the distribution system.

As stated above, no more than 5% of the disinfectant residual samples collected can be undetectable for any two (2) consecutive months that the system serves water to the public. Section B of the DR Form is used for reporting this information. Please note that a disinfectant residual must be collected whenever and wherever a total coliform sample is required to be collected – and **this includes both routine and repeat coliform samples**. The first column of Section B, "Number of Measurements Required in Month," should therefore equal the total number of routine and repeat coliform samples you were required to collect in the month. Additionally, if your system has a total coliform routine monitoring schedule that changes due to seasonal increases in your population, your required number of disinfectant residual samples will also change accordingly.

In the final column of Section B, the value "V" represents the monthly percentage of undetectable disinfectant residuals measured in the distribution system. If the DR Form is completed online using the formatted excel spreadsheet, this value will be automatically calculated for you and if the "V" value is greater than the allowable 5%, the "Check here if not in compliance with maintaining a residual in 95% of distribution samples" box will also be automatically checked for you. If this box is checked for two (2) consecutive months, your system has incurred a violation. Data in Section B is due *monthly*.

Section C of the DR Form records the number of samples collected in the month and the monthly average of those samples. At the end of every quarter, the running annual average should be calculated and entered in the "Annual Average of Monthly Results" column at the bottom of the form. Please note that Section C of the excel spreadsheet is ***not*** formatted to automatically calculate your running annual average or to check if your system is not in compliance with the MRDL. Data in Section C is due *quarterly*.

In order to avoid Monitoring and Reporting violations, please begin to submit the DR Form, Section B with December 2013 disinfectant residual data for your water system by January 10, 2014 and each month thereafter. Section C of the DR Form should continue to be submitted quarterly.

Further training on disinfection residual monitoring and compliance requirements will be offered in upcoming New Jersey Water Association Seminars. Please visit their website at <http://www.njwater.org/> for details on upcoming training opportunities.

If you have any questions regarding the disinfection residual monitoring and compliance requirements that apply to your potable water system please do not hesitate to contact Kristin Tedesco or Felicia Fieo of my staff at (609) 292-5550 or via email at Kristin.Tedesco@dep.state.nj.us or Felicia.Fieo@dep.state.nj.us

Enclosures (DR Form)

Cc: Northern Bureau of Water Compliance and Enforcement
Central Bureau of Water Compliance and Enforcement
Southern Bureau of Water Compliance and Enforcement

Disinfectant Residuals (DR) Reporting Form

Applicability

The Disinfectant Residual Form (BSDW-25) (DR Form) must be completed by any water system that adds a chemical disinfectant or delivers water that has been previously treated with a chemical disinfectant (other than chlorine dioxide). The reporting frequency (monthly or quarterly) varies based on system type as outlined below.

All surface water, ground water under the direct influence of surface water (GWUDI) and consecutive systems that purchase surface water or purchase GWUDI (Subpart H systems) must submit a copy of this form on a monthly basis to the Bureau of Safe Drinking Water (Bureau). Complete the appropriate fields identifying the monthly monitoring period and facility ID located at the top of the form.

Section A

Section A shall be completed and submitted monthly by all surface water & GWUDI systems. Section A is not applicable to systems that purchase surface water or GWUDI and should be left blank unless you are a surface water or GWUDI system. If the excel version of form BSDW-25 (Rev 10/13) is used, the Bureau has set the form to automatically determine compliance once the longest duration the disinfectant residual was less than 0.2 mg/l is entered in hours.

Section B

Section B shall be completed and submitted monthly by all Subpart H systems, including surface water purchasing systems. Systems that purchase surface water or GWUDI on a seasonal basis should complete Section B and submit for all 12 months during the year. During months where no purchased surface water or GWUDI is delivered, the surface water or GWUDI purchasing system is still required to complete Section B and maintain a residual in 95% of distribution samples.

If the excel version of form BSDW-25 (Rev 10/13) is used, the Bureau has set the form to calculate the distribution residual (V) for you and automatically determine compliance once fields A through E have been entered. Otherwise, the distribution residual (V) must be calculated manually by the system.

Section C

Section C is required to be completed and submitted quarterly by all systems that add a chemical disinfectant or deliver water that has been previously treated with a chemical disinfectant. Section C must be completed and submitted during the third month of every quarter (March, June, September, and December) in accordance with the guidelines below. During the other months, Subpart H systems may leave Section C blank when submitted.

- Complete the quarterly monitoring period check box incorporated in the table.
- Check the appropriate column to indicate whether chlorine or chloramines are used to maintain the disinfectant residual.
- Enter the total number of residual samples taken each month (should be the same as the total number of coliform samples, including repeat and temporary routine coliform samples) and enter the average residual of the monthly samples, for each of the three months.
- Calculate the quarterly average of the monthly results and enter the averages from the previous three quarters in the appropriate fields. Calculate the Running Annual Average (RAA) to determine compliance. If the excel version of form BSDW-25 (Rev 10/13) is used, the Bureau has set the form to calculate the RAA for you and automatically determine compliance once the average of the current quarter and previous three quarters have been entered in the appropriate fields.

Note: if the system uses chlorine dioxide for disinfection, report the residuals using the Chlorite and Chlorine Dioxide Reporting Form, BSDW-26.